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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/779,423	02/13/2004	C. Yvonne Thiel	T-6201 (538-54)	1117

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EXAMINER	
TOOMER, CEPHIA D	

ART UNIT	PAPER NUMBER
1797	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/779,423	THIEL ET AL.	
	Examiner	Art Unit	
	Cephia D. Toomer	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *4/21/08*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Office action is in response to the remarks filed April 21, 2008. Applicant's arguments are persuasive and the finality of the prior office action is withdrawn.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-15 and 17-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Esche (US 20040014612) in view of Migdal (US 5,075,383).

Esche teaches a multifunctional fuel additive that improves fuel economy comprising a hydridized, acylated olefin copolymer (see abstract). Preferred copolymers for use in the invention are copolymers of ethylene and one or more C_3 to C_{23} olefins (propylene) and optionally a nonconjugated diene (see paragraph 6). The number average molecular weight of the copolymer is between 700 and about 500,000 (see paragraph 10). An ethylenically unsaturated carboxylic acid such as maleic anhydride is grafted onto the polymer backbone (see paragraph 12). The carboxylic reactant is grafted onto the polymer backbone in amount from about 0.5 to about 6.0 molecules of carboxylic reactant per molecule of polymer backbone (see paragraph 14). Esche uses coupling agents such as organopolyamines to derivatize the copolymer compound, wherein the organo group is aromatic (see paragraphs 19 and 23). In

preparing the coupled acylated olefin copolymers of Esche, the molar charge of coupling compound per mole of ethylenically unsaturated carboxylic reagent (maleic anhydride) can vary depending upon the choice of coupling compound (see paragraph 27). This teaching suggests that the proportion may be optimized.

Esche teaches that the hybridized olefin copolymer can be added directly to the fuel (diesel) in an amount from 0.001 to about 0.5 wit %. Esche teaches that conventional additives may be present in the fuel composition (see paragraphs 28, 29 and 30).

Esche differs from the claims in that he does not specifically teach the that the coupling agent is N-arylphenylenediamine. However, Migdal teaches this difference.

Migdal teaches the same dispersant additive as set forth in the present invention (see abstract; col. 6, lines 54-68; col. 7, lines 1-6).

It would have been obvious to one of ordinary skill in the art to choose the claimed N-arylphenylenediamine as the coupling agent because Esche teaches broadly that such compounds are within the scope of his invention and Migdal teaches that the organopolyamine coupling agents of Esche include N-arylphenylenediamine.

3. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Migdal (US 5,075,383).

Migdal teaches the same dispersant additive as set forth in the present invention (see abstract; col. 2, lines 35-68; col. 3, lines 1-56; col. 3, line 65 through col. 4, lines 1-28). Migdal contemplates using the additives in fuel compositions (see col. 10, lines 35-

49). Migdal teaches the limitations of the claims other than the differences that are discussed below.

In the first aspect, Migdal differs from the claims in that he does not specifically teach a diesel fuel composition. However, it would have been obvious to one of ordinary skill in the art to use the additive in diesel fuel because Migdal contemplates using the additive in fuel compositions and this teaching suggests all fuel compositions.

In the second aspect, Migdal differs from the claims in that he does not specifically teach the ratio of amino-aromatic polyamines to grafted copolymer. However, no unobviousness is seen in this difference because Migdal teaches reacting the polymer with the amino-aromatic polyamine and this teaching suggests a ratio of at least 1:1.

4. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Esche or Migdal in view of DeCanio (US 5,925,151).

Esche and Migdal have been discussed above. The references fail to teach the sulfur content of the diesel fuel. However, DeCanio teaches this difference.

DeCanio teaches a diesel fuel composition comprising a detergent additive wherein the fuel may be a low sulfur diesel fuel. The diesel fuel should contain less than 500 ppm sulfur (see abstract; col. 2, lines 56-61).

It would have been obvious to one of ordinary skill in the art to utilize low sulfur diesel fuels because DeCanio teaches that heir use is conventional in the art and the skilled artisan recognizes that U. S. environmental regulations dictate the use of low sulfur fuels.

Response to Arguments

5. Applicant's arguments have been fully considered but they are not persuasive.

Applicant argues that Esche fails to teach the claimed composition or method for improving soot dispersancy wherein the copolymer is further derivatized with at least one amino-aromatic polyamine compound.

The examiner respectfully disagrees. Esche does teach using an amino aromatic polyamine compound to derivatize the copolymer. However, he fails to teach the specifics regarding the amino compound. Migdal teaches this limitation.

Applicant argues that the terms fuel compositions embrace a wide spectrum of fuels and that one skilled in the art would not be motivated to use the composition of Migdal in diesel fuel. Applicant argues that Migdal did not appreciate the soot dispersing properties of the copolymer.

The examiner is aware that the terms fuel compositions embrace many types of fuels. However, the mere fact that Migdal teaches that the additive of his invention has dispersancy properties and may be used in a fuel composition is evidence that one skilled in the art would have been led to, not discouraged from, testing the additive in various fuel compositions through routine experimentation to determine in which fuels the additive would perform its attendant function.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cephia D. Toomer whose telephone number is 571-272-1126. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Cephia D. Toomer/
Primary Examiner
Art Unit 1797

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